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Australian/New Zealand Standard™

Information technology—Computer graphics and image processing—Presentation environment for multimedia objects

Part 3: Multimedia systems services

[ISO/IEC title: Information technology—Computer graphics and image processing—Presentation Environment for Multimedia Objects (PREMO), Part 3: Multimedia Systems Services]

Standards Australia

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This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee IT/1, Information Systems—Interconnection. It was approved on behalf of the Council of Standards Australia on 17 December 1999 and on behalf of the Council of Standards New Zealand on 20 December 1999. It was published on 20 April 2000.

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee IT/1, Information Systems—Interconnection. This Standard is identical with and has been reproduced from ISO/IEC 14478-3:1998, *Information technology—Computer graphics and image processing—Presentation Environment for Multimedia Objects (PREMO)*, Part 3: *Multimedia Systems Services*.

The objective of this Standard is to provide designers of multimedia systems a set of system software components which marshal lower-level system resources to the task of supporting multimedia processing so providing a set of common services which can be used by multimedia application developers.

This Standard is Part 3 of AS/NZS 14478, *Information technology—Computer graphics and image processing—Presentation environment for multimedia objects*, which is published in parts as follows:

Part 1: Fundamentals of presentation environment for multimedia objects
Part 2: Foundation component
Part 3: Multimedia systems services (this Standard)
Part 4: Modelling, rendering and interaction component

The terms 'normative' and 'informative' have been used in this Standard to define the application of the annex to which they apply. A 'normative' annex is an integral part of a Standard, whereas an 'informative' annex is only for information and guidance.

As this Standard is reproduced from an International Standard, the following applies:

(a) Its number does not appear on each page of text and its identity is shown only on the cover and title page.

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Reference to International Standard		*Australian/New Zealand Standard*	
ISO/IEC		AS/NZS	
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11172	Information technology—Coding of Moving Pictures and Associated Audio for Digital Storage Media at up to about 1.5Mbit/s (MPEG)	—	
14478	Information technology—Computer graphics and image processing—Presentation Environment for Multimedia Objects (PREMO)	14478	Information technology—Computer graphics and image processing—Presentation environment for multimedia objects
14478-1	Part 1: Fundamentals of PREMO	14478.1	Part 1: Fundamentals of presentation environment for multimedia objects
14478-2	Part 2: Foundation Component	14478.2	Part 2: Foundation component
14478-4	Part 4: Modelling, Rendering, and Interaction Component	14478.4	Part 4: Modelling, rendering and interaction component

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Part 3: Multimedia systems services

1 Scope

This part of ISO/IEC 14478 defines a standard set of multimedia system services that can be used by multimedia application developers in a variety of computing environments. The focus is on enabling multimedia applications in a heterogeneous, distributed computing environment. Throughout this part of ISO/IEC 14478, this component will also be referred to as "Multimedia Systems Services", and abbreviated as MSS.

The Multimedia Systems Services constitutes a framework of "middleware" — system software components lying in the region between the generic operating system and specific applications. As middleware, the Multimedia Systems Services marshals lower–level system resources to the task of supporting multimedia processing, providing a set of common services which can be used by multimedia application developers.

The Multimedia Systems Services encompasses the following characteristics:

a) provision of an abstract type for a media processing node, extensible through subtyping to support abstractions of real media processing hardware or software;

b) provision of an abstract type for the data flow path or the connection between media processing nodes, encapsulating low–level connection and transport semantics;

c) grouping of multiple processing nodes and connections into a single unit for purposes of resource reservation and stream control;

d) provision of a media dataflow abstraction, with support for a variety of position, time and/or synchronization capabilities;

e) separation of the media format abstractions from the dataflow abstraction;

f) synchronous exceptions and asynchronous events;

g) application visible characterization of object capabilities;

h) registration of objects in a distributed environment by location and capabilities;

i) retrieval of objects in a distributed environment by location and constraints;

j) definition of a Media Stream Protocol to support media independent transport and synchronization.

The Multimedia Systems Services rely on the object model of ISO/IEC 14478-1 (Fundamentals of PREMO) and the object types and non–object data types defined in ISO/IEC 14478-2 (PREMO Foundation Component).